

# **MODIS TECHNICAL TEAM MEETING**

**August 18, 1994**

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Locke Stuart, Dick Weber, Janine Harrison, John Bauernschub, Dorothy Hall, Harry Montgomery, Steve Ungar, Bill Barnes and Bruce Guenther.

## **1.0 SCHEDULE OF EVENTS**

Sept. 13 - 14	MODIS Quarterly Review at SBRC
Sept. 15	533Q Financial Reports due to Teresa Mautino
Sept. 20 - 22	SDST Simulation Data Workshop, Flathead Lake, MT
Oct. 11	Calibration Working Group, Holiday Inn, College Park, MD
Oct. 12 - 14	MODIS Science Team Meeting, Holiday Inn, College Park, MD
Oct. 15	Quarterly Technical Report for July-Sept. due to Barbara Conboy
Oct. 17 - 18	Oceans Productivity Working Group, Greenbelt Marriott Hotel

## **2.0 MINUTES OF THE MEETING**

### **2.1 MODIS Project Reports**

Weber reported that Project has agreed to proceed with flight model 2 for EOS AM-2. A planned consolidated parts buy for the protoflight model, flight 1 and flight 2 will result in substantial savings.

Weber announced that the beryllium structure passed the vibration test which is good news. This is the biggest beryllium structure that GSFC has ever tested.

Weber went out to SBRC last week where the issue of downsizing the SRCA resurfaced. Bill Holster, a Science Representative at SBRC, was tasked by SBRC to look at calibration and see if parts of it could be eliminated. He advocated dropping the spectral monochromator and along track registration. Dick Weber told SBRC that Goddard did not want these elements dropped. Barnes said they then suggested eliminating the last two bands in the SDSM, at 1.3  $\mu\text{m}$  and 1.6  $\mu\text{m}$ . Barnes said that since most of the degradation in the diffuser would be in the blue range, eliminating those bands might be considered. The SDSM would then drop down to nine spectral bands instead of eleven.

SBRC is still looking at the issue of crosstalk in the focal plane. Salomonson asked Weber about the stray light problem. Weber indicated that one stray light problem is closely associated with the diffuser; when the door to the diffuser is open, the SRCA fold mirror is near the diffuser thereby causing energy from the sun to reflect into the scan cavity. Weber thinks SBRC won't be able to eliminate this stray light, but can reduce it. While using the diffuser for the reflective calibration, there will be stray light in the scan cavity. Weber did say that at least this problem is predictable. SBRC will do what they can to minimize it. Guenther said that it should be noted that the IR channels will not be particularly useful when doing solar diffuser measurements, but the solar diffuser won't be used that much anyway. Guenther said that the diffuser door will be closed when not doing solar diffuser measurements.

Weber brought up the issue of the MODIS budget exercise. This exercise is in response to a memo from Dick Weber and the MTPE Office (Code 170) who requested detailed budget information for the MODIS Science Team through FY 2000. Additional information is needed in order for this budget exercise to be considered complete. One question that needs to be answered concerns breaking down the SCI budget into science and algorithm development elements. Salomonson stated that under the current reduced budget scenario through the year 2000, all of the MODIS SCI funds are being used for algorithm development. Stuart indicated he would inform Code 170 that they should consider all of the MODIS SCI to be algorithm development funding. The other information being requested concerned a more detailed explanation of the overguide request and a list of SCI and SCF planned milestones/highlights on a year-by-year basis. Stuart indicated that he will pull together a meeting of relevant MODIS personnel and come up with the additional information by the Sept. 7 deadline. Salomonson will review these additional inputs and then forward them to Weber and Code 170.

Weber also mentioned that Code 421 plans to place the Team Leader Working Agreement for MODIS under CCB control. Weber said that changes to that agreement would only take place with the MODIS Team Leader's direct involvement in the process. Harrison provided Weber with an electronic copy of the agreement.

## **2.2 MCST Reports**

Guenther reported that the mirror scatter problems have not been resolved and that the unanswered questions will require some modeling. Guenther said SBRC will not be able to do that modeling nor will they be able to build the fixtures to do the testing of the engineering model. At the October MODIS Science Team Meeting, Guenther plans to present the MCST calibration plans based only on models. Guenther thinks that even next spring his calibration planning will be based only on models because little empirical data will be

available from SBRC. Salomonson asked Guenther if Slater might become more involved in these aspects of calibration. Guenther agreed to discuss these issues with Slater. Barnes thinks that by next spring measurements with high intensity light will offer a better feel for the magnitude of the problem. Guenther said that he believes MCST will have to do some modeling themselves because they need the information sooner than SBRC can supply it.

Guenther presented a handout on MODIS Operations Concepts (Attachment #1). Guenther will attend an Aug. 19 workshop on MODIS Operations. The handout explains the MODIS requirements for ground operations support. The required support includes things like command and control, health & safety/housekeeping monitoring, field campaign support, staffing, and systems upgrades. With command and control, his primary concern is interoperability. He would like the computer screens that are used for flight operations to match those screens used during the integration of the instrument and spacecraft by Martin Marietta. Health and safety concerns include being able to access the data acquired during integration and test in the thermal vacuum and being able to monitor the instrument and spacecraft. With regard to field campaign support, Guenther said the current program design for the ground system calls for a 24-hour turnaround time. He noted that if EOS turnaround time increases beyond 24 hours, then MODIS will want to implement a field campaign support program so that MODIS measurements can be obtained within one day in order to support the ground measurements. Salomonson asked about the availability of the data via direct broadcast. Guenther affirmed the usefulness. Guenther stated that this effort will lead to a requirements document for Martin Marietta in about one week and is helping them get on track for the ground system PDR in December. Salomonson noted that it also works toward satisfying the flight operations element of the Team Leader Working Agreement for MODIS.

### **2.3 BOREAS Report**

Ungar reported that the MAS flew successfully on the C-130 at BOREAS. Ungar said it was the first time the Ames engineers were able to view the MAS while it was operating in flight. Ungar showed a MAS image of Candle Lake. He noted that the MAS is better suited to flight on the ER-2 and that the MAS will clearly not become a C-130 facility instrument. However, the data collected will be of great science value to BOREAS scientists and has inspired thoughts of developing a C-130 version of MAS better suited to land applications to replace/augment the NS001. Salomonson said he recently received a proposal for an Advanced Landsat Simulator and thinks that maybe a multi-purpose instrument for use in land applications could be developed. Salomonson asked Ungar to coordinate with Darrel Williams on this effort because NASA Headquarters will be reluctant to support aircraft instrumentation unless it can fly on a variety of aircraft and be used by several projects.

Ungar noted that another three-week BOREAS field experiment is scheduled to start on Aug. 26. He said that he was disappointed that there were not many MODLAND participants. Ungar is interested in giving a presentation on preliminary MAS BOREAS results at the October Science Team meeting in order to stimulate interest in BOREAS within the MODLAND group.

#### **2.4 ASTER's Need for Simulated MODIS Data**

Salomonson reported that in the recent issue of the EOS Observer, he read that the Japanese working on ASTER require simulated MODIS and MISR data by the middle to the end of 1995. Salomonson is wondering if we will be able to give them the simulated dataset. Salomonson said that the atmospheric correction group for ASTER thinks that they will not be able to produce just one algorithm; they'll need at least two algorithms.

#### **2.5 SDST Report**

##### 2.5.1 Working group formed on Quality Assurance.

Robert Lutz is chairing a working group whose task is to define how quality assurance will be done for science products. Lutz is preparing a strawman document on quality assurance of science products that he will distribute to the group. Ed Masuoka is the MODIS representative on the group and will forward this strawman to the Science Team for comment.

##### 2.5.2 Ad Hoc Working Group on Production

A working group has been formed to refine the details of how science products will be produced in EOSDIS. Specific information to be collected by the group and provided to the ESDIS project includes: all input, output, and temporary data sets needed by each science algorithm; specifics about the volume and timeliness of data to be transferred to SCFs to do Q/A; and what kind of browse products and browse services does each instrument team envision for their Level 2 and Level 3 products. Ed Masuoka, Al Fleig, and Bob Evans participated in the first telecon of this group which is chaired by Bruce Barkstrom (CERES) and Mel Banks (ESDIS). Ed will be coming out with a request for information from the team regarding specific processing and ancillary data requirements for each product.

##### 2.5.3 Update to SPSO Database

Steve Wharton is requesting an update to the SPSO Database and Masuoka has mailed out copies of the request and the latest hardcopy version of the database to the Science Team. Steve would like the MODIS response by 8/31.

#### **2.6 MAST Reports**

Salomonson gave Harrison his written comments on the new MODIS brochure text written by David Herring. Dick Weber said that he'd like to review the brochure text once Herring incorporates Salomonson's revisions.

Harrison reported that the development of a MODIS Home Page on the World Wide Web (WWW) is coming along and that MAST would like to solicit feedback from the MODIS Science Team. She noted that the MODIS Home Page is currently “under construction”, but is far enough along to be reviewed. Comments on the MODIS Home Page can be e-mailed to David Herring at:  
[herring@ltpsun.gsfc.nasa.gov](mailto:herring@ltpsun.gsfc.nasa.gov)

The MODIS Home Page can be accessed directly from the Goddard Home Page by selecting the “Moderate-Resolution Imaging Spectroradiometer (MODIS)” item under the “920 - Laboratory for Terrestrial Physics” heading. The MODIS Home Page’s Universal Resource Locator (URL) is:

<http://ltpwww.gsfc.nasa.gov/MODIS/MODIS.html>

### **3.0 ACTION ITEMS**

#### **3.1 Action Items Carried Forward**

1. *Barnes*: At Salomonson’s request, explore the possibility of EMI effects on MODIS data as a result of direct continuous broadcast.
2. *Science Team*: Provide information to Salomonson regarding the significance of the timing error issue.
3. *Fleig & Herring*: Review the MODIS brochure and recommend changes/alternatives [Ongoing—the first draft is complete and being reviewed].
4. *Fleig and Ungar*: Interact with the group leaders prior to developing a MODIS data simulation plan for review at the next Science Team Meeting, due July 4.
5. *Masuoka*: Provide Gordon’s Water Leaving Radiance software to ESDIS project as a test case for the utility of massively parallel processing. [Beta software has been received from the Oceans Group.]

### **4.0 ATTACHMENTS**

**NOTE:** All attachments referenced below are maintained in MODARCH and are available for distribution upon request. Please contact David Herring, MAST Technical Manager, at (301) 286-9515, Code 920, NASA/Goddard Space Flight Center, Greenbelt, MD 20771 if you desire copies of any attachments. Or, e-mail [herring@ltpsun.gsfc.nasa.gov](mailto:herring@ltpsun.gsfc.nasa.gov).

1. “MODIS Operations Concepts,” by Bruce Guenther.

## 5.0 RECENT MODIS DOCUMENTS

**Note: All recent MODIS documents are maintained in MODARCH. If you would like access to or information about MODARCH, please contact the MODARCH System Administrator, Michael Heney, at (301) 286-4044 or via e-mail at [mheney@ltpsun.gsfc.nasa.gov](mailto:mheney@ltpsun.gsfc.nasa.gov).**

1. Geolocation ATBD, by SDST. Distribution to the MODIS Science Team by August 5, 1994.